

HEALTH AND STRENGTH

A Simple
System
of
Indoor
Physical
Exercise
Without
Apparatus
Illustrated



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HEALTH AND STRENGTH



Health and Strength

A SYSTEM OF

Simple and Effective Indoor Exercises for
the Proper Development of
the Human Body

By a Practical Method of Muscle Training Exercises, with Sixteen Illustrations Demonstrating the Use of Each Exercise, comprising what is Best in the Various Systems Practiced by Physical Culture Experts, and Tested by Actual Experience.

By AUGUSTUS FREMONT

Physical Culture Society of America
Philadelphia

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PREFACE

IT IS not so many years ago that the general disposition was to look upon any systematic culture of the physical faculties with somewhat contemptuous eyes. While the ancient aphorism *mens sana in corpore sano* might be very well in an academic way, still the tendency undoubtedly was not only to place the operations and cultivation of the mind on a far higher plane of dignity than merely physical functions, but to insist on an absolute separation in idea between the mental and the physical.

The last twenty years or so have, however, greatly changed the point of view from which the question is regarded. Doubtless the great wave of athleticism which has swept over this country has had much to do with the change of opinion, as well as being in itself partly a product of the new mental attitude towards things physical; and while it is possibly true that the "athletic craze" may have reached its topmost point, even if it has not begun to decline, out of it or coincident with it has grown a widening impulse among those who have no great interest in athletics as a sport to take regular exercise for its hygienic effect on their own physical well-being.

It is not everyone who has the time or inclination for golf or other out-door amusements; but there is a very rapidly growing number of people, men and women, who have learned that a certain amount of systematic exercise is of immense benefit to the comfort, happiness and usefulness of life. People are learning that reasonable and proper exercise in a systematic way, both for those leading sedentary or active lives, increases their physical, mental and moral effectiveness, minimizes the tendency to disease, and makes life longer and happier. The various secret systems of physical culture that have been so widely advertised have helped many people; but they are all essentially the same, and this little book is written by one who has tried them all and who summarizes here what is best and most practicable in them.

HEALTH AND STRENGTH

“WHY don't I get along faster?” anxiously inquires the indoor worker, searching self and surroundings for the hindrance to progress. “Why does John Doe, who is mentally my inferior, get up the ladder, while I do well to cling to the round I have hung to these years?”

The story is told by the faces and figures—John's, ruddy, stocky and abounding in vigor; the other, pale, pinched from poor nutrition, with only enough strength to compass the ordinary daily routine, and nothing to spare for the extra efforts that alone lift one to the place where there is room—the top.

Hard work—intelligent hard work—is the grand secret of advancement. “If anybody asked me what is the secret of success in life,” says Senator Depew, “and what is the secret of happiness in life, I should say: ‘Work, work, work;’ that when a man goes to bed he may feel that all the work that his hand and mind have found to do has been rounded up and finished.” Genius alone is incapable of winning the golden prize—“No abilities, however splendid,” affirmed A. T. Stewart, the pioneer and prince of modern business, “can command success, without intense labor and persevering application.” Carnegie once called Schwab “a human thunderbolt.” The reason for Schwab's

success is not hard to find. Sydney Smith stated it, when he said, "A man proves a miracle of genius, because he has been a miracle of labor."

To do hard, telling work, however, is impossible without good health. P. T. Barnum was the most successful showman that ever lived. He had abounding health, and knew that it was at the bottom of his achievement. "The foundation of success in life," said he, "is good health; that is the substratum of fortune; it is the basis of happiness. A person cannot accumulate a fortune very well when he is sick. He has no ambition; no incentive; no force." Says another, "The first requisite to success is to be a first-class animal. Even the greatest industry cannot amount to much, if a feeble body does not respond to the ambition." The testimony on this point is unanimous. All noted thinkers, all great workers, agree on the value of health. Emerson says, "The first wealth is health. Sickness is poor-spirited and cannot serve anyone; it must husband its resources to live; but health answers to its own ends and has to spare, runs over and inundates the neighborhoods and creeks of other men's necessities." "The measure of a man's vitality," says Blackie, "is the measure of his working power."

"How, then, to increase my vitality?" is the question the indoor worker ought to ask himself.

Enhance that, and success will take care of itself, —is an undoubted truth.

The prescription for an advance of vital energy is not to be had of the prescription clerk. Though priceless, it comes without money and without price, to all who will take the trouble to secure it. "It is composed of five parts," says J. F. Clarke, "to be taken daily : (1) Sun ; (2) Air ; (3) Exercise ; (4) Plain, nourishing food ; and (5) a contented mind."

Sunlight is nature's great disinfectant and germicide. Like the X-rays, it is all-penetrating. It will penetrate the human body through and through. Photographic negatives have been made of plates, between which and the camera lens are interposed a living human body. The exposure was of long duration, but the result demonstrated that nothing is impenetrable to old Sol's light-shafts.

To get as much as possible of the sunlight, places of work should be kept well lighted, except when, as in summer, too much heat accompanies the light. A leisurely walk during the nooning, on the sunny side of the street in cool weather, and more in the shade in summer, is of great benefit. On holidays and on Sundays, as much time as possible should be spent in the open air. Sun-baths—lying or sitting in the sun—are strengthening, except in the heated term. Those who cannot endure the direct

heat of the sun should learn to accustom themselves to it, by trying it a little while at first, and gradually increasing the time. At every opportunity the indoor worker ought to avail himself of the physiological blessings of direct sunlight.

Someone describes the human body as "a nitrogenized mass of hydrocarbon," whose only use is to be burned up. This aptly pictures the precise truth. Life is combustion. The hydrogen and carbon of the body are continually combining with oxygen in slow combustion, to produce the gentle, uniform heat of health. If any one of the three parties to combustion is deficient, life suffers, and vitality declines.

The human furnace ought to receive at least as good treatment as a house heater. No one would think of choking off the air from a furnace, nor of expecting a fire to burn brightly with air that had already been passed through half a dozen other furnaces and thus deoxidized. Yet that absurd way is exactly how we treat the human fire. We fail to breathe fully and deeply, and we stay for hours in rooms whose air has passed through the lungs of a dozen people or our own, time and time again,—and then we wonder why our vital fire burns low!

Ventilation will solve the bad-air problem. A free but gentle circulation of air, without drafts,

and a daily or twice-a-day airing out of rooms, ought to be sufficient.

Breathing, however, ought to receive special and continuous attention. It is doubtless true that there is not a single process of existence or of work that we do not have to study and practise, if we would do it right, and breathing is no exception to this rule.

The importance of correct breathing can hardly be overestimated. It is one of the best signs of the times that the art of breathing—for correct breathing is an art—has become more and more an object of attention. “Oculists as well as physiologists go deeply into its study in a way hardly to be touched on here. Physicians have cured aggravated cases of insomnia by long-drawn, regular breaths, fever-stricken patients have been quieted and stubborn forms of indigestion made to disappear,” says a London physician. “A tendency to consumption may be overcome, as some authorities in the past few years have demonstrated, by exercise in breathing. Seasickness, too, may be prevented, and the victim of hypnotic influence taught to understand and resist the force of the energy directed against him.” There is hardly any human ill that will not tend to disappear under the stimulating effects of right breathing.

Correct breathing is the first thing taught in any

good system of personal hygiene or exercise. It is of vital importance, especially so because hardly one person in a hundred knows how to breathe properly. The methods of breathing that used to be taught were by no means the best. Most people have been taught to expand their chests in deep breathing. This act necessarily draws the abdomen in, when inhaling a breath, the very effect that should not be produced. That it is wrong can readily be seen by lying down flat on the back and taking in a long breath. Without any effort the abdomen will rise and expand when inhaling, and fall and contract when exhaling. This gives Nature's directions for the natural and only beneficial way of breathing in any position, whether lying down, standing, or sitting. No heed should be paid to the chest. The only part to be watched is the abdomen. It may require some effort at first to breathe correctly; but after a while it will become a habit and be performed unconsciously. Whatever one is doing, breathing should be performed by extending the abdomen gently forward and slowly inhaling until the lungs are entirely filled. The shoulders should then be thrown back, and the breath held for a few seconds. Then the breath should be forcibly expelled by drawing in the abdomen. From eight to seventeen breaths should

be taken a minute, always breathing through the nose—never through the mouth.

The following breathing exercise is beneficial to other organs besides the lungs. Stand as in figure 1, erect, with hands on hips and fingers resting on abdomen, all muscles of arms, legs and body rigid. Extend the abdomen and inhale a long breath; hold it, then draw the abdomen in slowly but forcibly. Repeat from six to twenty times, according to whether very tired or not. This exercise should be practiced at frequent intervals through the day, and particularly when taking a walk, long or short. The movement produces that churning effect on the stomach which is essential to good digestion. It not only helps the lungs, but if persisted in, is a certain cure for dyspepsia, no matter of how long standing. The results will



FIGURE 1

soon be apparent, in the shape of a better and more healthy appetite, better assimilation of food, and increasing bodily weight.



FIGURE 2

The third important item in good health is exercise. Few realize the dangerous depression of spirits consequent upon long-continued confinement to indoor work. The office worker is told by the ruddy outdoor man, "You ought to exercise out of doors when you get home, to make up for your confinement." He fails to realize that so great has been the drain on the vital forces, coupled with the bad effects of impure air, that the indoor man will only make himself still more weary by obeying the injunction to "work outdoors," "take long walks," and so on.

The writer has tried nearly everything in the way of exercise, indoors and outdoors. He knows that with one exception, all methods have been exhausting rather than beneficial. The sole exception is a system of exercise, on which

unimportant changes are "rung," and which is being exploited in slightly different forms by professional teachers. The series of exercises that follow will accomplish, for the man or woman who will follow them, practically all that can be expected from the various "systems" that are now in successful use.

The fundamental principle is that the growth of muscle is facilitated fastest by the lifting of heavy weights. People whose muscles are in such condition as to be in need of such development, however, cannot handle weights without straining their muscles and overtaxing their hearts to an injurious extent. A substitute for weight-lifting must be employed. This

is found in the "opposition" of muscles. The muscles of the arm are opposing each other when the arm is held rigid; the more rigid, the more intense the opposition of the muscles.



FIGURE 3

In like manner the muscles of any part of the body can be opposed by making the part rigid. If the arm is gradually bent, while rigid, the opposing muscles perform precisely the same kind of work as in lifting weights, without the danger of strain.



FIGURE 4

The amount of work depends upon how rigid the arm is made, and can be varied instantly by changing the rigidity, thus rendering impossible the dangerous strains to weak muscles to which the exerciser with weights is liable.

The following is a practicable system of exercise based on the principle of opposition of muscles :

First Exercise.—Stand erect with arms at sides, parallel with the body, palms forward and fists tightly clenched. With rigid muscles and without disturbing position of arm from shoulder to elbow, slowly raise the fist to the position of figure 2 ; hold it there a few seconds, and then gradually lower it



FIGURE 5

to original position. Do likewise with the other arm. Repeat from four to fourteen times.

Second Exercise.—Standing erect, with arms extended horizontally at each side, palms forward and fists tightly clenched ; swing arms with rigid muscles slowly forward until the fists touch, as in figure 3. Return with rigid muscles. Repeat four to fourteen times.

Third Exercise.—Lie at full length on back on floor. With folded arms and without bending knees

or raising heels from the floor, lift the head slowly about eighteen inches from the floor to position shown in figure 4—exactly the same motion as in trying to look over the toes. Return slowly to original position. Repeat three to fourteen times.



FIGURE 6

forward on a level with the shoulders, palms downward and fists tightly clenched, as in figure 6.

Fourth Exercise.— Assume a horizontal position, face downward, with palms of hands and toes resting on floor. In this attitude slowly lower the body until the chin touches the floor, as in figure 5, returning slowly to position, and repeating four to fourteen times.

Fifth Exercise.— Stand erect with arms extended

With rigid muscles bring both arms simultaneously downward to the side; hold them there a few seconds, and slowly raise them to first position. Repeat four to fourteen times.

Sixth Exercise.—Stand erect with arms extended to sides on a level with the shoulders, palms upward, and fists tightly clenched, chest out and shoulders thrown back. With muscles rigid, bring the arms upward until the fists touch squarely above the head, as in figure 7. Return to position with muscles rigid. Repeat four to fourteen times.

Seventh Exercise.—Lie at full length on floor on back. With arms folded and without bending knees—which is best prevented by putting tips of toes under edge of bed or other convenient projection, such as a sofa or heavy chair—slowly rise to a square sitting position, as in figure 8. Return slowly to position, rest, and repeat two to fourteen times.



FIGURE 7

Eighth Exercise.—Stand erect, arms extended to sides on a level with shoulders, palms downward and fists tightly clenched. With rigid muscles, bring arms down to side. Hold them there a few



FIGURE 8

seconds, and slowly return them to first position. Repeat four to fourteen times.

Ninth Exercise.—Stand nearly erect, leaning slightly forward, with tips of fingers against the wall to help maintain balance. With rigid leg muscles, slowly rise on tiptoes, as in figure 9, returning slowly to position. Repeat ten to thirty times.

Tenth Exercise.—Lie at full length on back on floor. Using hips as a pivot, slowly raise feet without bending knees until they come to a right angle with the body, as in figure 10. Return slowly to original position, rest, and repeat two to fourteen times.

Eleventh Exercise.—Stand erect, chest thrown forward, arms down at sides. Slowly drop the body perpendicularly toward the floor, using knees as a pivot, exactly as if sitting down on the heels, as in figure 11. Return to erect position, and repeat four to fourteen times.

Twelfth Exercise.—Stand erect with arms at sides, palms backward, and muscles rigid. Swing arms upward and chest backward, until arms are extended at full length over the head; then with a forward movement, using hips as a pivot, without bending



FIGURE 9

knees, touch the floor with the tips of the fingers, as in figure 12. Return slowly to the position with arms over head, and then swing the rigid arms down slowly to original position at the sides. Repeat four to fourteen times.

Thirteenth Exercise.—Stand erect with chest



FIGURE 10

thrown out, arms extended horizontally at either side. Bend body slowly to right and left alternately, trying to touch tips of fingers to the floor, as in figure 13. Repeat four to fourteen times.

Fourteenth Exercise.—Stand erect with chest thrown out, arms extended horizon-

tally at sides, with tightly clenched fists and arm-muscles rigid. Slowly raise and lower the fists as much as possible, with a wrist movement, as in figure 14. Repeat four to fourteen times.

Fifteenth Exercise.—From an erect position lean forward, bending the body at the hips, so as to

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form a right angle with the legs. With arms hanging downward, as in figure 15, without change of position of hips and knees, with all muscles free, swing arms out and up with object of having backs of hands touch above the shoulders. Repeat four to fourteen times.

Sixteenth Exercise.—In an erect position, extend arms horizontally to the sides, palms upward, fists clenched. With muscles rigid, slowly bend the right arm up at the elbow, as in figure 16. Slowly return, with rigid muscles, to first position. Do same with left arm. Repeat four to fourteen times.

During the first week that these exercises are practised, each one should be performed not more than three or four times. The number may be increased three or four times each week until the full limit is reached or exceeded. The limits mentioned are sufficient to produce an ample supply of muscle



FIGURE 11

and strength. If lameness or soreness results at first from any of the exercises, reduce the number of times, but nevertheless persist in daily practice.

The exercises ought to be taken at night just before going to bed. They are most easily done when one is partially disrobed, having on only undershirt,



FIGURE 12

drawers and stockings. During the exercise period, the windows should be opened enough to allow the air to circulate, as it is very important that nothing be breathed but pure air, the fresher and purer the air, the better being the results of the exercise.

It is recommended that a cold sponge bath be taken immediately after exercising, followed by a thorough rub-down, first with a rough towel and

then with the palms of the hands, until unable to continue from sheer weariness. This will greatly improve the circulation of the blood and induce ready, refreshing sleep. Before exercising, it may be of advantage to drink a glass of cold water. This course of exercise, if persisted in, will banish dys-

pepsia and insomnia, and within a few months cause a marvelous increase of muscle and strength. It will add interest to the work to keep a monthly record of progress by means of the following measurements: (1) forearm normal; (2) forearm rigid; (3) upper arm normal; (4) upper arm rigid; (5) chest normal; (6) chest expanded; (7) thigh normal; (8) calf normal; and (9) calf rigid.

Reverting to the items in the prescription for good health, food requires some mention. No list of foods can be made that will apply to all persons, or that the average person would take the trouble to adopt, no matter how beneficial it might be to do so. A safe rule, that any one can observe, is to avoid food that is found not to agree with one.



FIGURE 13



FIGURE 14

It is unquestionable that most people eat more than they actually need. The excess of food passing through the stomach and bowels ferments and

decays, producing unwholesome gases as well as some products that are inevitably absorbed into the system with the food that is utilized. If the system becomes charged with these harmful products, the kidneys, lungs, liver and skin are overworked in getting them out, and Nature, though doing her best in the internal struggle for good health, occasionally finds the task too much, and is overcome by one or another of the marauding bacterial armies, and we have a "cold," typhoid fever, kidney trouble, liver complaint, or



FIGURE 15

some other of the thousand ills that flesh is heir to. It is generally a losing game when Nature has not only to fight the forces of disease, but to clean the system of bad blood caused by careless eating, even though it may take years

for the evil effects to show themselves. A reduction in the amount eaten will come about



FIGURE 16

without effort, if care is taken to properly chew the food that is eaten. Each morsel should be chewed from twenty to thirty times. The habit of thorough mastication will lighten the load on the digestive organs and make for greater efficiency and a longer and happier life. Consequently one should keep the teeth in good working order.

Dr. Clark gave an admirable prescription for health, with its five ingredients, but he made one important omission. The perfect prescription should be composed of a perfect number of ingredients—six be-

ing requisite for perfection.

The missing item is rest. "Every hour stolen

from sleep," says Nikola Tesla, "is two hours taken from life itself." Nature is a stern creditor. She never forgets. "The time borrowed from the requisite hours for sleep," wrote Dr. Oliver Wendell Holmes, "must be paid back in after life at a ruinous rate of interest." If rest has been missed, the safest plan is to make it up at once, so as not to fall into the hands of the most relentless Shylock of all—Nature—so as not to have to face, late in life, a staggering list of "I. O. U.'s," and have to give up a year or two of life when life is biggest with opportunity.

No hard and fast rule can be laid down for sleep. "The amount of sleep," says Virchow, the eminent German authority, "absolutely necessary for any individual, is an eminently personal matter. Everyone must sleep when tired and must sleep until rested." People are apt to ape the peculiarities rather than the excellences of the great—to conclude that since Napoleon slept but two or three hours a night, all who exceed that ruinously small time are oversleeping. In the matter of rest each person has to be a law unto himself. Not even his family physician can prescribe the amount of sleep he ought to take. "The amount of sleep necessary for any individual," states Dr. J. J. Walsh, "is not something to deduce by theory, but to be determined by actual experience." The point to be ob-

served by the seeker for more abundant life is that his rest account must balance the mental or physical work account—that there be no drafts made upon the constitution.

A contented mind, the final item in the prescription, is a blessing of incalculable worth. Worry, truly, kills its millions, in the ruinous rush of American life. The genuinely strenuous man, however, does not worry. He so schools and prepares himself as to be ready and calm in any emergency. Preparedness is said to be the secret of great success in life; it surely is a certain preventive of worry. A short cut to contentedness, then, is self-preparation, in advance, in the requirements that are likely to be made upon one in the various relations of life, from daily work to religion.

A notable example of the calm and contented mind is found in the present Pope, Leo XIII. He has always been a man of delicate health. At twenty, being declared a doomed consumptive, he wrote verses showing the folly of entertaining false hopes of long life and he resigned himself to his expected fate. Thrice since has his life been despaired of, but he has cheated the doctors and survived all of his contemporaries. Now, at ninety-two, he is capable of work that no really weak man could accomplish. That he has been exceptionally abstemious and that he has avoided the worries that drive other

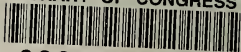
men into untimely graves, explain his great tenacity of life and health. It has always been a maxim of Leo XIII. that it is as much a man's duty to observe the laws of Nature as the moral and spiritual laws. He has shown and is still showing the world what a man of admittedly weak constitution is capable of, who properly cares for himself. His methods of life constitute a shining example for indoor workers in America to emulate.

The first law of Nature is self-preservation, and this, to be most effective, should begin with the improvement and preservation of the human physique.



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